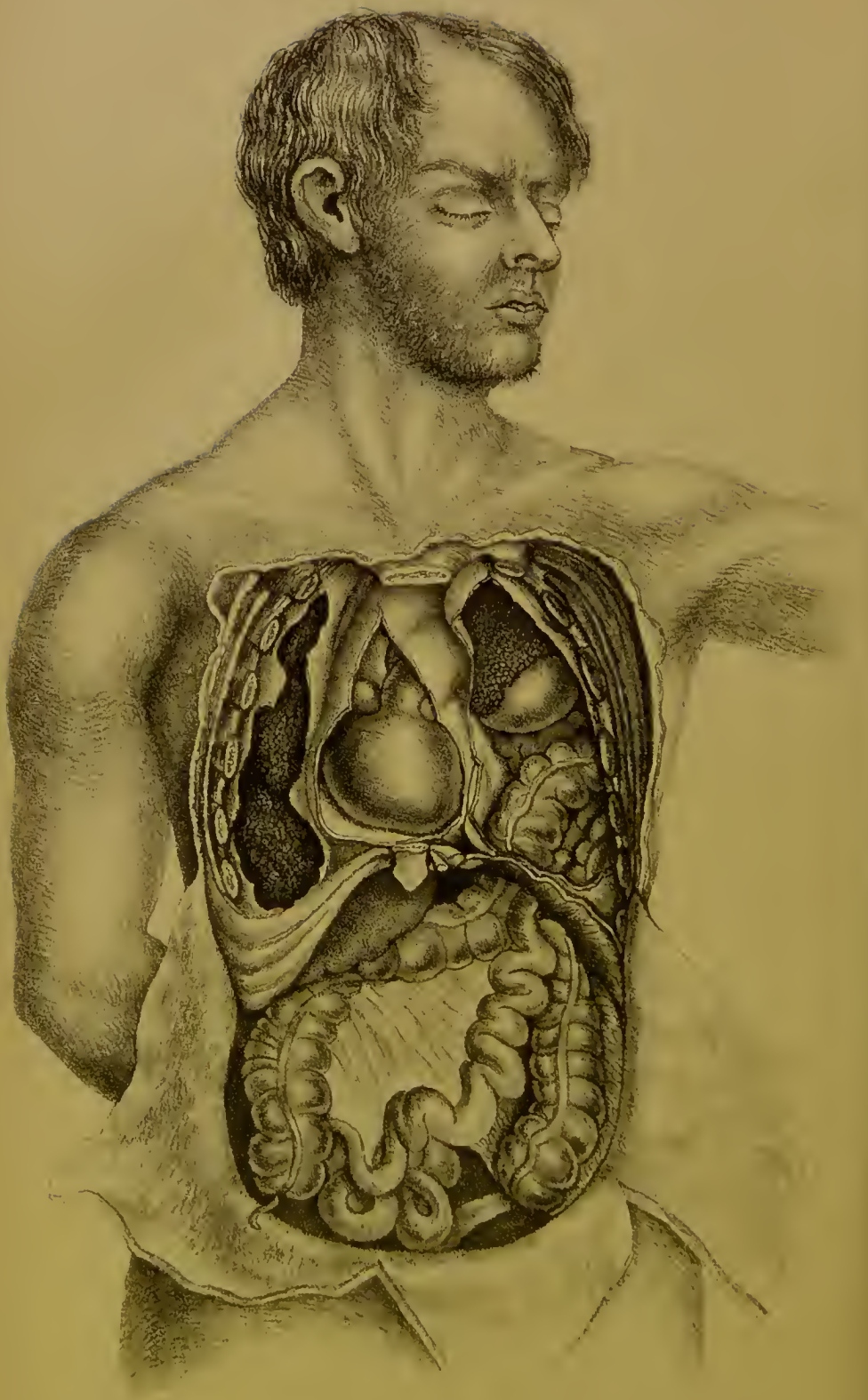

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DESCRIPTION OF PLATE.

This Plate illustrates Dr. Peacock's Case of Diaphragmatic Hernia, p. 40.

2. *Case of diaphragmatic hernia.*

J. L., æt. 50, was admitted into King's Ward, St. Thomas's Hospital, on the 17th of May, 1862.

He had been ill seven days, and was reported to have been drinking, and at the commencement of his illness had something of the nature of a fit; but when admitted into the Hospital he laboured under the usual symptoms of typhus. He was then much prostrated, though able to walk to his bed with assistance. He was directed to take the citrate of potash mixture.

He was seen by Dr. Peacock on the 19th, and the following notes were then taken. He is in a semi-comatose condition, but is capable of being aroused to answer questions; his expression of countenance is very oppressed; the pupils are contracted, the tongue dry and brown, and there is considerable tremor of the extremities. The skin of the abdomen and thorax is covered by a copious eruption which consists partly of distinct purple spots, which do not fade on pressure and are not elevated; and partly of an ill-defined purple mottling. The pulse is 120, and very feeble; the skin moderately warm and dry. The abdomen is not tumid or tender, but the bowels have been acted upon four times in the last twenty-four hours, and the stools are passed unconsciously, and are thin, dark, and very offensive. He passes water freely. He has a frequent cough, and expectorates a large quantity of sputum which is somewhat viscid, containing small and large air-cells, and is partly of a light russet colour and partly bloody. There is entire dulness on percussion in the left dorsal and lateral regions, and loud bronchial respiration and cough resonance are heard to the left of the spine. There is also some deficiency of the resonance on percussion in the right dorsal region, and large and small crepitation are there heard. He was directed to take the Carbonate of Ammonia with Tincture and Decoction of Bark, and half-an-ounce of Brandy, alternately every three hours, and to have a blister applied between the shoulders.

From this time he became gradually more prostrated, and died comatose on the 21st,—the eleventh day from seizure.

It was subsequently ascertained that he had resided in the house from which he was removed to the Hospital for two years and a-half, and during that time had been extremely intemperate in his habits. His landlady said that some time before he came to reside with her—she did not know how long—he had been crushed between the buffers of two railway carriages or engines, and had been seriously injured, and

was under treatment in one of the hospitals for a considerable time in consequence. He had ever afterwards been subject to pain in the left side of the abdomen, and to shortness of breath, cough, and expectoration. He had, however, continued to follow his occupation of a porter in a warehouse up to the time of his seizure.

The *post-mortem* examination took place on the 22nd.

The body still displayed the remains of livid spots in all parts of the trunk, with large ecchymoses posteriorly; it was well provided with fat.

The dura mater separated readily from the calvaria. The surface of the brain displayed considerable sub-arachnoid effusion elevating the membrane above the level of the convolutions. The arachnoid membrane was somewhat opaque, and the Pacchionian bodies were larger than usual. The convolutions were widely separated, and the vessels of the pia mater much congested. A considerable quantity of slightly opaque fluid was contained in the lateral ventricles, and a large effusion of serum was found at the base. The substance of the brain was tolerably firm, and on section the red dots were more numerous than usual. The basilar artery was dilated, and its coats were thickened, but not otherwise diseased. The encephalon weighed forty-seven and a-half ounces.

On the right side of the chest the pleuræ were slightly adherent, and the posterior part of the right lung was much engorged, and broke down readily on pressure. The bronchial tubes contained a considerable quantity of spumous fluid, but the mucous membrane was not materially congested and retained its natural transparency.

A large portion of the viscera of the abdomen were found to be lying in the left pleural cavity. The lower portion of the cavity was occupied by the stomach and spleen; the latter was of large size and much softened. In front of the stomach lay a large loop of the transverse colon, and nearly the whole of the small intestines were situated in the upper part of the cavity (*see* Plate). The viscera were found to have escaped from the abdominal cavity, through an aperture in the left side of the tendinous portion of the diaphragm, which was sufficiently large to admit the passage of the hand. The only portions of the alimentary canal which were not in the pleural cavity were the lower part of the ileum, the cæcum and ascending colon, and the descending colon and sigmoid flexure. The lower portion of the ileum passed obliquely across the abdominal cavity from the aperture in the diaphragm to reach the cæcum, the ascending colon went thence to the aperture, and the descending colon

passed from that point directly to the sigmoid flexure. The stomach and transverse colon were firmly adherent to the diaphragm near the opening on the thoracic surface, and the ileum and colon were similarly attached on the abdominal surface. The stomach was also united by strong adhesions to the parietes of the thorax.

The left lung was much compressed, so as to be reduced to a very small size, and was displaced to the upper and posterior part of the cavity, and bound down by firm fibro-cartilaginous adhesions to the mediastinum and to the ribs. The heart was somewhat displaced to the right, lying behind the lower part of the sternum. There were some adhesions between the lung and pericardium. The heart was large, and its walls flaccid. The ascending aorta was considerably dilated. The blood in the cavities of the heart and throughout the body was fluid and of a very dark colour.

The liver occupied its natural position, was hard and coarse in texture, and on section was somewhat greasy-looking and congested. The kidneys were in their proper situations. The small intestines, cæcum, and colon were free from all appearances of disease, and the mesenteric glands were not enlarged.

Remarks.—At the time this patient was first seen it was obvious that he laboured under typhus, and from the difficulty of breathing and cough and the peculiar character of the expectoration, it was inferred that there was active inflammation of the lung. On examining the chest the resonance on percussion was found to be entirely dull on the left side over a large space, bronchial respiration was heard at the posterior and upper part of the side, and crepitation was detected in the lower and posterior part of the right side. It was, therefore, supposed that there was extensive pneumonia or pleuropneumonia of the left lung and commencing inflammation in the right. It will be seen that these inferences were not entirely correct. The recent inflammation was limited to the base of the right lung, and the consolidation in the left lung was the result of the compression of that organ by the abdominal viscera which had escaped into the pleural cavity. The protruded viscera produced the dulness detected in the anterior and lateral parts of the left side.

2. The cases of diaphragmatic or phrenic hernia which are on record may be divided into two classes, *the true and false*. In the former, the abdominal viscera are protruded through one or other of the various apertures which penetrate the diaphragm, and thus they are found to

be enclosed in sacs formed by the peritoneum, and covered by another envelope derived from the pleura. Of this description a small number of cases only are on record. One instance of the kind described by Schoberus* is quoted by Morgagni, in which the stomach, duodenum, jejunum and part of the ileum and omentum passed through the aperture which transmits the œsophagus. Morgagni also refers to a case published by Platner,† in which the protrusion took place through the space by which one of the intercostal nerves penetrates the diaphragm; a case probably similar is described by Mr. Saint Andre in the Philosophical Transactions;‡ and a third is quoted from Quarin by Besnier§ in his recent work.

Morgagni and Senac pointed out that there exist spaces on each side of the zyphoid cartilage, in which the muscular structure of the diaphragm is wanting and there are apertures occupied only by cellular tissue; and the former writer supposed that herniæ might occur in these situations. This supposition is confirmed by a case published by Bignardi,‖ and by one related by Sir Astley Cooper¶ which occurred in the practice of Mr. Bowles of Bristol.

In the spurious form of phrenic hernia the protrusion takes place through apertures existing in the diaphragm, either from defective formation of that septum or in consequence of injuries sustained in after life. In this form of hernia the viscera are not enclosed in a sac, but pass with their natural connections from the abdominal into the thoracic cavity. By far the largest number of cases of phrenic hernia are of this description, and originate in congenital defects, and have been found in infants who have only survived for a short period. Such are the cases described by Dr. Fothergill** and Dr. Macaulay,†† and the instance recorded in the Pathological Transactions by Dr. Hillier,‡‡ and two specimens of the kind are contained in the Museum of St. Thomas's Hospital.§§ The late Dr. John Reid,‖‖ however, showed that the cases in which the defect is congenital do not all terminate at an early period of life, but that several instances are on record, in which it may be inferred that the aperture in the diaphragm

* Quoted from the Eph. Nat. Cur., Book iv. Sect. 54, Alexander's translation, vol. iii. p. 210. † *Ibid.*, p. 206. ‡ Vol. xxx. No. 352.

§ Des Etranglements internes de l'intestines. Paris, 1860, p. 255.

‖ Sull'Ernia diaframmatica Memoria. Modena, 1827.

¶ On Hernia, by Key. 2nd Ed., 1827, p. 69.

** Works by Lettsom, 1784, p. 161, in a letter to Dr. Mead.

†† Med. Obs. and Enq. by a Society of Phys. in London, vol. i., 4th Edit., 1776. pp. 26 and 31. ‡‡ Vol. xii., 1860-61, p. 115. §§ Section L L, Nos. 81 and 82.

‖‖ Ed. Med. and Surg. Journ., vol. liii., 1840, p. 104.

resulted from malformation, and in which the patients nevertheless survived to adult or even to middle or advanced age.

Dr. Bowditch has published a case in which this defect was found in a boy of seventeen, who died from a fracture of the spine.*

In Dr. Monro's† work on the Morbid Anatomy of the Gullet, Stomach, and Intestines, a case is related which occurred to Dr. Patterson of Ayr, in a female twenty-two years of age. Riverius‡ relates a case in a man of twenty-four; Sir Astley Cooper,§ one in a female of twenty-eight; Petit,‖ one in a man of forty; Forlivesi,¶ one in a man of forty-two; and Sir Astley Cooper** quotes from Dr. Leacock the report of a case which occurred in a man forty-nine years of age. The gentleman whose case is recorded by M. Chauvet,†† of Toulon, was a Lieutenant-Colonel who had seen active service, and may therefore be inferred to have been at least of middle age; and Vetters' ‡‡ case is said to have occurred in an old man.

In the cases of hernia which result from accident the diaphragm is either found to have been perforated by stabs with swords or other sharp-pointed instruments, lacerated by the ends of broken ribs, or ruptured by violence without material injury of the adjacent organs. In most of the cases of this kind the injuries prove rapidly fatal, but in some the patients survive for a short time, and yet in others the recovery is complete and the patient dies from an entirely independent affection, or from secondary effect of the injury. A case is related by Ambrose Paré,§§ in which the patient died eight months after a penetrating wound of the diaphragm. Mr. Bayle‖‖ has recorded an instance in which the patient was wounded eleven months before. In the case related by Dr. Reid,¶¶ the injury had been inflicted fifteen months before, and in that detailed by Mr. Greetham,*** four years had elapsed since the receipt of the wound.

* Treatise on Diaphragmatic Hernia. Buffalo, 1853.

† Edinburgh, 1811, p 540.

‡ Obs Med. et cur. centuria iv.; Obs. lxxvii.; Opera Med. Univ. Lugd., 1679.

§ *Op. cit.*, pp. 69. ‖ Traité des Malad. Chir., T. ii., 1790, p. 229.

¶ Bulletino della Scienze Mediche, 1842, quoted in Gaz. Med. de Paris, 2me serie, T. xime, année, 1843, p. 192. ** *Op. cit.*, pp. 73.

†† Mem. de l'Acad. Royale des Sc., année, 1729. Paris, 1731, p. 11, Obs. 2.

‡‡ Aphorismen aus der Pathologischen Anatomie. Wien, 1803, § 158, p. 144.

§§ Pareus, Lib. ix. cap. 30, quoted in Sepulchretum Bonoti, Lib. iv., Sect. iii.; De Vulneribus, § 8. See also Dr. Reid's Paper, Ed. Med. and Surg. Journal, 1840, vol. liii., for this and the three following cases.

‖‖ Ed. Med. and Surg. Journal, vol. viii., 1812, p. 42.

¶¶ The question chiefly discussed by Dr. Reid is the dependence of the aperture in the diaphragm on the stab the patient had received, and he clearly establishes that point. *** Lond. Med. Gaz., vol. x., p. 43.

When the perforation of the diaphragm is the result of laceration, either by broken ribs or otherwise, death often rapidly ensues, partly from such accidents generally resulting from falls which give rise to other serious injuries. In the second part of the paper by Dr. Reid, two cases of this kind are related.* One of them was that a railway labourer who was crushed by a fall of earth and died shortly after, under the care of Mr. Fergusson, in the Edinburgh Infirmary. The ribs were found to have been broken and the diaphragm torn, and the stomach, spleen, and transverse colon had penetrated through the aperture into the left pleural sac. The other case, communicated by Dr. Traill, was that of a slater, who fell from the top of a house and pitched with his abdomen on the curb-stone. His leg was fractured and required amputation and he died shortly after. On examination, the diaphragm was found to have been ruptured, and the stomach and a portion of the intestines had passed into the thorax. Mr. Wainwright† has recorded the case of a man who was thrown from the top of a coach and died in two days, and was found to have sustained a laceration of the diaphragm, without however any fracture of the ribs. In the same paper there is a notice of case examined by Mr. Travers, and of which the preparation is now in the Museum of St. Thomas's Hospital.‡ The patient fell a height of thirty-six feet from the mast of a ship to the deck and died in a few hours, having sustained fracture of some of the ribs, as well as a laceration of the diaphragm allowing of the displacement of the abdominal viscera. Sir Astley Cooper § quotes the history of a case of laceration of the diaphragm and hernia of the stomach and duodenum, described by Mr. James Simpson, in which the patient survived five days. Mr. Cæsar Hawkins‖ has related, in the Pathological Transactions, the case of a patient who had a laceration of the diaphragm and fracture of both arms and other injuries, and survived thirteen weeks. Mr. Taylor¶ has published, in the Guy's Hospital Reports, the case of a man who, after fracture of the ribs and rupture of the diaphragm, lived nine months. Dr. MacFadyen,** of Glasgow, has recorded the case of a slater, who, in a fall from a great height, sustained a rupture of the diaphragm; recovered from the injury, and then died, after a short illness, at an interval of twelve months.

* Vol liv. † Med.-Chir. Trans., vol. vi., 1819, p. 374.

‡ Section R, No. 105. The rupture in this case is situated on the right side.

§ *Op. cit.*, p. 71.

‖ Vol. i., 1846-47, 1847-48, p. 150. The abdominal viscera were not displaced in this case. ¶ Vol. iii., 1838, p. 366.

** Ed. Med. and Surg. Journ. vol. xix., 1823, p. 282.

Dr. A. T. Thomson* has related a very similar case in which the patient survived for the same period, but in which some of the ribs were broken. Dr. Clarke† has related a case in which the patient, after fracture of the ribs and laceration of the diaphragm, lived two years.

Still more remarkable are the cases related by M. Derrecagaix and Mr. Morgan.

The subject of the case related by the former gentleman‡ was a carpenter, thirty-nine years of age, who fell from the dome of the Invalides and finally pitched upon a heap of rubbish. He sustained severe injuries, and was for a time in a very dangerous state, but at the end of five or six months he was sufficiently recovered to be able to resume his employment. He, however, continued ever after to suffer from a frequent dry cough, pain in the left side of the chest, and general indisposition. Fifteen years after he had another fall from a height of twenty feet. He then fractured several of his ribs, had general emphysema, and died in fifteen hours. In addition to the recent injuries, the stomach and arch of the colon were found in the cavity of the chest. They had escaped through an aperture in the aponeurotic portion of the diaphragm, and this was seen to be of old date from the firm attachments of the epiploon to the diaphragm near the opening. In the case of Mr. Morgan,§ a man, fifty-four years of age, received an injury of the leg from the fall of a stone, and died in seven days, having suffered latterly from spmptoms of enteritis. On examination after death, the whole of the stomach, the small intestines, the omentum and the spleen were found in the left pleural cavity and there were old adhesions between these viscera and the parietes of the chest. It appeared that when thirty-eight years of age, or sixteen years before his death, he had been struck by a tree upon the abdomen, and had always after been subject to dyspeptic symptoms and to dyspnœa. It was therefore supposed that the rupture of the diaphragm and displacement of the viscera had occurred at that time.

In the article on ruptures of the diaphragm, in the Dict. des Sc. Medicales, by M. Percy, a case of laceration of the diaphragm from violent efforts during childbirth is related. It proved rapidly fatal.

* Lond. Med. Gaz., vol. v., N. S., 1847, p. 583.

† Trans. of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. ii., 1800, p. 118. This preparation is in Dr. Baillie's collection, at the Royal College of Physicians, and is figured in his plates—Pl. viii., Fig. 1.

‡ Journal de Chirurgerie par Dessault, 2me annéc, T. 3me, 1792, p. 9.

§ Lond. Med. Gaz., vol. xii., 1833, p. 673.

From the facts which have been mentioned, it will be seen that in the case which has been related the aperture in the diaphragm may have been either a congenital defect, or the result of the crush which the man had sustained some years before his death. I am, however, disposed to regard it as most probably due to the accident. It was distinctly reported that he had suffered from difficulty of breathing, cough, expectoration and pain in the left side of the abdomen for the latter portion of his life, and that he himself ascribed those symptoms to the injury which he had sustained, though the period at which the accident occurred could not be ascertained. It is also evident from the state of the left lung, its great reduction in size and the firm adhesions by which it was bound down, and from the attachments of the displaced abdominal viscera to the upper and under surface of the diaphragm in the neighbourhood of the aperture and to the parietes of the thorax, that active inflammatory action had occurred at a period very considerably anterior to the death of the patient. It is true that in some of the cases in which the aperture in the diaphragm was regarded, and probably correctly, as congenital, adhesions existed between the viscera and the sides of the aperture through which they passed into the thorax; but in such instances the attachments are described as having been looser and slighter than those which were found in the present case.

3. This case does not throw much light on the symptoms which diaphragmatic herniæ produce during life. Like several, however, of the instances which are on record, the displacement of the abdominal viscera gave rise to pulmonary symptoms—dyspnœa, cough, and expectoration; and it is probable that the collapsed condition of the lung was in some degree accessory to the death of the patient, by rendering of much more serious importance the inflammation of the other lung. What effect the displacement of the stomach and intestines produced on the functions of these organs does not appear. The man was so intemperate in his habits that had any symptoms of dyspepsia been complained of, they could not have had much more importance attached to them.

In some of the cases of phrenic hernia the patients were subject at intervals to attacks of colic and constipation, and several of them proved fatal from the protruded portions of the intestinal canal becoming strangulated in the apertures through the diaphragm. Such appears to have been the cause of death in the cases of hernia through the natural passages described by Schoberus, Quarin, and Bignardi. Fatal

strangulation occurred also in the cases of congenital defect related by Dr. Patterson, Sir Astley Cooper, Dr. Leacock, and M. Forlivesi; and the patient mentioned by Petit had been liable during all his life to attacks of colic, but the cause of death is not named. The cases of protrusion of the viscera through punctures of the diaphragm reported by Mr. Boyle, Mr. Greetham and Dr. Reid, also terminated by strangulation, and in Ambrose Paré's case there were occasional attacks of colic. In the instances of rupture of the diaphragm described by Dr. Clarke, Mr. Morgan, Dr. MacFadyen and Dr. A. T. Thomson, fatal obstruction also occurred. In the case recorded by Riverius and in that of Mr. Bowles, the patients died from the violent efforts to vomit excited by the exhibition of emetics.

In the present case there was not, at least during the last periods of the patient's life, any obstruction of the bowels. Indeed during the time he was in the Hospital he laboured under diarrhœa. His previous history in this respect could not be ascertained.

Printed by J. W. Roche, 5, Kirby Street, Hatton Garden.